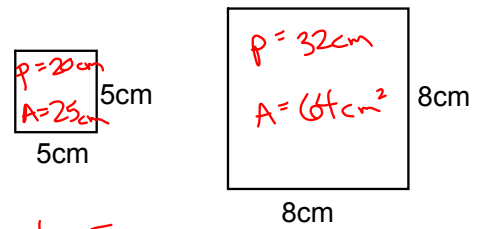


11.3 Perimeter and Area of Similar Figures



Scale Factor $\left(\frac{5}{8}\right)$
 Ratio of Perimeter $\frac{20}{32} = \frac{5}{8}$
 Ratio of Areas $\left(\frac{25}{64}\right)$

Theorem 11.7 Area of Similar Polygons

If 2 polygons are similar with the lengths of corresponding sides in the ratio of $a:b$, then the ratio of their areas is $a^2:b^2$.

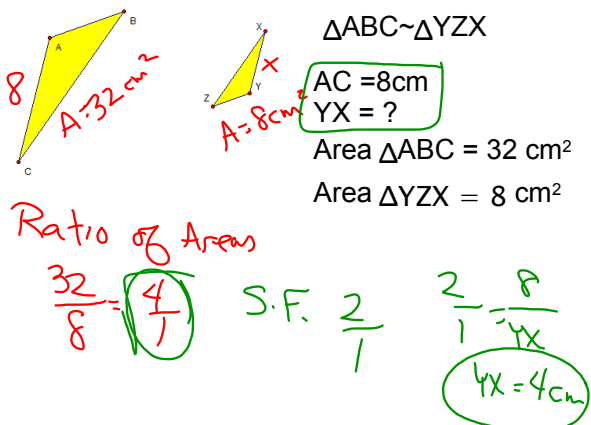
The scale factor of 2 similar rectangles is $9:5$

What is the ratio of the perimeters? $9:5$

What is the ratio of the areas? $81:25$

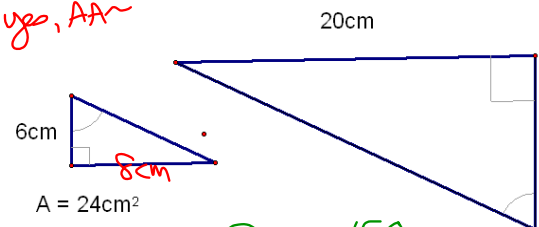
If the area of the 1st rectangle is 42cm^2 , what is the area of the 2nd rectangle?

$$\frac{81}{25} = \frac{42}{A} \quad A = 130\text{cm}^2$$



Are the triangles similar?

yes, AA~



$A = \frac{1}{2}bh$ S.F. $\frac{8}{20} = \left(\frac{2}{5}\right)$ $A = 150\text{cm}^2$
 $24 = \frac{1}{2}6b$ $8\text{cm} = b$ Ratio Areas $\frac{4}{25} = \frac{24}{x}$

11.4 Circumference and Arc Length

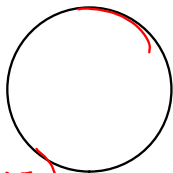
$$C = 2\pi r$$

$$C = \pi d$$

ex $r = 7\text{ cm}$

$$C = 44\pi \text{ cm (Exact Answer)}$$

$$\approx 43.98 \text{ (approximate)}$$



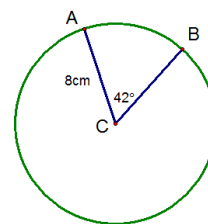
$$\text{Arc Length} = \frac{\text{Angle}}{360^\circ} \cdot 2\pi r$$

$$\widehat{AB} = \frac{42}{360} \cdot 2\pi \cdot 8$$

$$= \frac{28\pi}{15} \text{ cm}$$

$$\approx 5.86 \text{ cm}$$

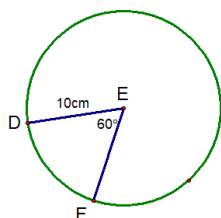
$$m\widehat{AB} = 42^\circ$$



$$\text{Arc Length} = \frac{\text{Angle}}{360^\circ} \cdot 2\pi r$$

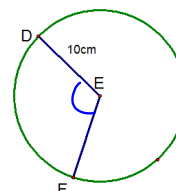
$$\frac{60}{360} 20\pi$$

$$\frac{10\pi}{3} \approx 10.47 \text{ cm}$$



$$\widehat{DF} = 20.2 \text{ cm}$$

$$m\widehat{DF} = \underline{\hspace{2cm}}$$



$$20.2 = \frac{x}{360} 20\pi$$

$$7272 = (20\pi)x$$

$$115.7^\circ \approx x$$

HW

p740-741

#s 5-7, 13, 23

p750-751

#s 11, 12, 17-25